Preliminary Foundation Recommendations Bridge 4: I-75 Reversible Lanes over Windy Ridge Parkway Northwest Corridor Project

GDOT Project No. NH000-0073-03(242), PI No. 714130 Cobb County, Georgia

WILLMER ENGINEERING INC.

Project No. ATL-171-3463BFI3

Document No.: ATL-171-3463BFI3-4

Revision: A

Issue Date: October 27, 2009 Document Status: Issued for Review

Prepared For

GEORGIA TRANSPORTATION PARTNERS

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	PWR AND AUGER REFU	JSAL ELEVATIONS (fe	et)
Bent No.	Reference Boring No.	Top of PWR	Auger Refusal
1	BR-14	945.5	-
2	B-42	931	924
3	B-43	941	927
4	B-44	-	937.5
5	B-45	903	886
6	B-46	865.5	855
7	B-47	854	-
8	B-48	825.5	-
9	B-49	847	829
10	B-50	858	843
11	B-51	866	856
12	B-52	880	870
13	B-53	898	882
14	B-54	885	874

Doc. No.: 171-3463BFI3-4 Page 1 of 4 Issue Date: 27-Oct-09

	MAXIMUM PIL	E DESIGN LOADS													
Dilo Typo	Load Tr	ansfer (%)	Design Load												
Pile Type	Friction	End Bearing	Design Load												
			HP 10x42 = 55 Tons												
H-Piles	20	70	HP 12x53 = 70 Tons												
n-riies	30 /0	-Files 30 /0		n-riles 30 70		Piles 30 70		; 30 /0	les 30 70	es 30 /0	30 /0		i-Piles 30 /0	70	HP 14x73 = 96 Tons
			HP 14x89 = 117 Tons												

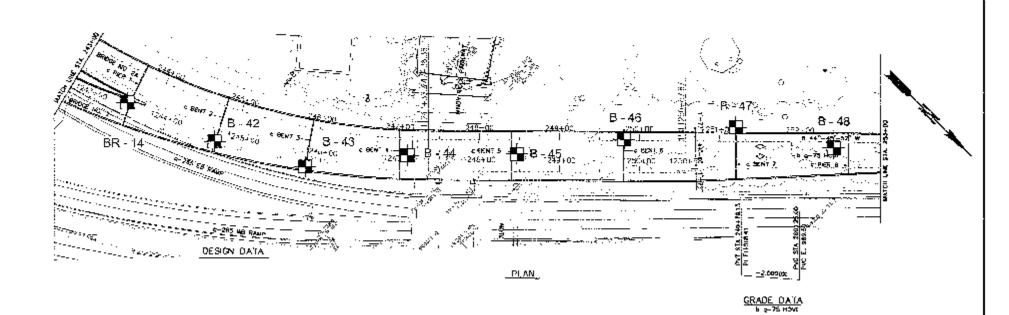
Doc. No.: 171-3463BFI3-4 Page 2 of 4 Issue Date: 27-Oct-09

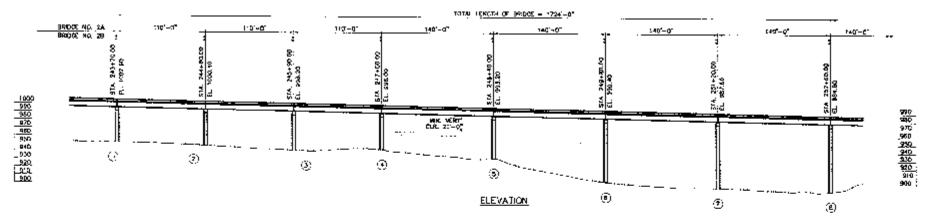
		FOUNDA	TION RECO	MMENDATIONS		
	D	rilled Shaft			Pile	
Bent No.	Skin Frict	tion (ksf)	End	Spread Footing	Footing	Pile Bent
	PWR	Rock	Bearing (ksf)	(Bearing)	(Type)	(Type)
1						Н
2					Н	
3				10 ksf on PWR		
4				20 ksf on rock		
5					Н	
6					Н	
7					Н	
8					Н	
9					Н	
10					Н	
11					Н	
12					Н	
13					Н	
14						Н

Doc. No.: 171-3463BFI3-4 Page 3 of 4 Issue Date: 27-Oct-09

		ELEVA	TIONS (feet)		
Bent	Reference	Bottom of	Rottom of Sproad	H-Pile	e (ALT)
No.	Boring No.	Drilled Shaft	Bottom of Spread Footing	Minimum Tip	Estimated Tip
1	BR-14			939±	939±
2	B-42			930±	928±
3	B-43		936 or below		
4	B-44		937 or below		
5	B-45			902±	900±
6	B-46			864±	862±
7	B-47			853±	851±
8	B-48			834±	832±
9	B-49			846±	844±
10	B-50			857±	855±
11	B-51			865±	863±
12	B-52			879±	877±
13	B-53			895±	893±
14	B-54	·		885±	883±

Doc. No.: 171-3463BFI3-4 Page 4 of 4 Issue Date: 27-Oct-09





LEGEND:

BORING LOCATION

3 42

NOTE: BRIDGE PLAN AND PROFILE PROVIDED BY GEORGIA TRANSPORTATION PARTNERS

GDOT PROJECT NUMBER NH000-0073-03(242) PLNo. 714100

DATE: 11" = 120"

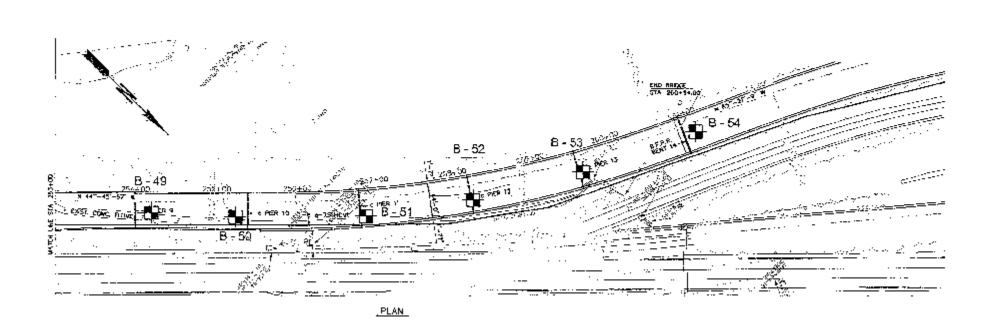
DATE: 10/20/2009

DRAWN BY: JK

REVIEWED BY: MK



GEOTECHNICA: FINGNEFITIMA = COMPURATION SERVICEE ENVIRONMENTAL SHANCH, AND EXPLICEMENTO \$772 PLEASARCH (1-80AL) SUITE 166 ALLANIA, GARINGO 4770 FIGURE 2 - (SHEET * OF 2)
BORING LOCATION PLAN
BRIDGE 4: I-75 REV. OVER WINDY RIDGE PKWY
NORTHWEST CORRIDOR PROJECT
COEB COUNTY, GEORGIA
WILLMER PROJECT No. ATL-171-0483



LEGEND:

BORING LOCATION

NOTE: BRIDGE PLAN AND PROFILE PROVIDED BY GEORGIA TRANSPORTATION PARTNERS

GDOT PROJECT NUMBER NH000-0073-03(242) PLN0, 714130

SCALE: 17 - 120*

DATE: 10:23/2009

DRAWN BY: K

REVIEWED BY: MK



ELEVATION

CEOYSCHINICAL SYMMEERING IN CONSTRUCTION MARKINGS.
I EVILATAMENTAL SERVICES AND ENGINEERING
SYMMERSANTIME ROSE SUITE 165
ATLANTAL GA 303-04270

FIGURE 2 (SHEET 2 OF 2)
BORING LOCATION FLAN
BRIDGE 4: 1-75 REV. OVER WINDY RIDGE PKWY
NORTHWEST CORRIDOR PROJECT
ICOBB COUNTY, GEORGIA
WILLMER PROJECT NO. ATL-171-34035F13



HOLE No. BR-14 Bridge 4: I-75 Reversible Lanes Over Windy Ridge Pkwy Project: Sheet 1 of 1 Location: Cobb County, Georgia 171-3463BFI3; GDOT Proj. #: NH000-0073-03(242); PI #: 714130 Location: BENT - 1 Project Number: Station: ST 243+68, 44' Rt. of BL Azimuth: --Angle from Horizontal: Surface Elevation (ft): 949.45 CME550/MACTEC Drilling Method: HSA-Auto Hammer Drilling Equipment: Core Boxes: NA Samples: 7 Overburden (ft): 24 Rock (ft): NA Total Depth (ft): 24.0 10/13/09 Logged By: Date Drilled: SAMPLE TYPE ELEVATION DEPTH (ft) N-VALUE GRAPHIC **/ERTICA** REC% (feet) STANDARD PENETRATION TEST DATA Log Rob MATERIAL DESCRIPTION (blows/foot) 60 10 20 949.5 TOPSOIL - 2 inches SS FILL 10 FILL: Loose gray and reddish brown silty medium to fine **SAND** with rock SS SM 14 SS fragments (micaceous) **PWR** 945 50/5' RESIDUUM: Medium dense gray and brown silty medium to fine SAND SS 98/10 (micaceous) SS PARTIALLY WEATHERED ROCK: 940 50/2' 10 Sampled as very dense gray silty medium to fine SAND SS 935 50/5 15 SS 50/2' 930 20 SS T50/5' Boring was terminated at 24 feet below the existing ground surface. No ground water was encountered at the time of boring. SAMPLER TYPE **DRILLING METHOD** Hole No. NX - Rock Core, 2-1/8" SS - Split Spoon HSA - Hollow Stem Auger RW - Rotary Wash CU - Cuttings CFA - Continuous Flight Augers RC - Rock Core ST - Shelby Tube **BR-14** NQ - Rock Core, 1-7/8" CT - Continuous Tube DC - Driving Casing



Bridge 4: I-75 Reversible Lanes Over Windy Ridge Pkwy HOLE No. B-42 Project: Location: Cobb County, Georgia Sheet 1 of 1 171-3463BFI3; GDOT Proj. #: NH000-0073-03(242); PI #: 714130 Location: **BENT - 2** Project Number: ST 244+81, 46' Rt. of BL Azimuth: --Angle from Horizontal: Surface Elevation (ft): 945.16 Station: CME 550/Gable Drilling Method: HSA Auto Hammer Drilling Equipment: Core Boxes: NA Samples: 7 Overburden (ft): 21 Rock (ft): NA Total Depth (ft): 21.0 10/19/09 Logged By: CO Date Drilled: SAMPLE TYPE ELEVATION DEPTH (ft) N-VALUE GRAPHIC **/ERTICA** REC% (feet) STANDARD PENETRATION TEST DATA Log R MATERIAL DESCRIPTION (blows/foot) 10 20 60 945.2= RESIDUUM: Medium dense, dense and SM very dense brown and white silty SS 62 medium to fine SAND with rock fragments (micaceous) SS 23 940 SS - very dense layer 50/1 SS 38 10 935 SS PWR # PARTIALLY WEATHERED ROCK: 15 930 80/9' Sampled as very dense brown and white silty medium to fine SAND with rock fragments SS 50/3" 925 SS Auger refusal was encountered at 21 feet 50/0" below the existing ground surface. No ground water was encountered at the time of boring completion. This boring was performed 10 feet north of the original location. Two offset borings were performed within 10 foot radius of this boring location. The borings encountered auger refusal between 6 to 9.5 feet below the existing ground surface. Boring caved in to 14.3 feet below the existing ground surface 24 hours after boring completion. SAMPLER TYPE DRILLING METHOD Hole No. NX - Rock Core, 2-1/8" RW - Rotary Wash SS - Split Spoon HSA - Hollow Stem Auger CFA - Continuous Flight Augers RC - Rock Core CU - Cuttings ST - Shelby Tube **B-42** NQ - Rock Core, 1-7/8" CT - Continuous Tube DC - Driving Casing



Bridge 4: I-75 Reversible Lanes Over Windy Ridge Pkwy HOLE No. B-43 Project: Location: Cobb County, Georgia Sheet 1 of 1 171-3463BFI3; GDOT Proj. #: NH000-0073-03(242); PI #: 714130 Location: **BENT - 3** Project Number: Station: ST 245+90, 50' Rt. of BL Azimuth: --Angle from Horizontal: Surface Elevation (ft): 941.11 CME 550/Gable Drilling Method: HSA Auto Hammer Drilling Equipment: Core Boxes: NA Samples: 6 Overburden (ft): 14 Rock (ft): NA Total Depth (ft): 14.0 10/19/09 Logged By: CO Date Drilled: SAMPLE TYPE ELEVATION DEPTH (ft) N-VALUE GRAPHIC VERTICAL REC% (feet) STANDARD PENETRATION TEST DATA LOG Rob MATERIAL DESCRIPTION (blows/foot) 10 20 60 941.1 PWR PARTIALLY WEATHERED ROCK: SS 940-Sampled as very dense black and 50/1 white silty medium to fine SAND with SS rock fragments 50/3" 935 SS 50/3" SS 10 85/9' 930 50/3" SS SS Auger refusal was encountered at 14 feet 50/0" below the existing ground surface. No ground water was encountered at the time of boring completion. This boring was performed 10 feet north of the original location. These offset borings were performed within 10 foot radius of this boring location. Those borings encountered auger refusal between 1.5 to 3 feet below the existing ground surface. SAMPLER TYPE **DRILLING METHOD** Hole No. NX - Rock Core, 2-1/8" SS - Split Spoon HSA - Hollow Stem Auger RW - Rotary Wash CU - Cuttings CFA - Continuous Flight Augers RC - Rock Core ST - Shelby Tube **B-43** NQ - Rock Core, 1-7/8" CT - Continuous Tube DC - Driving Casing

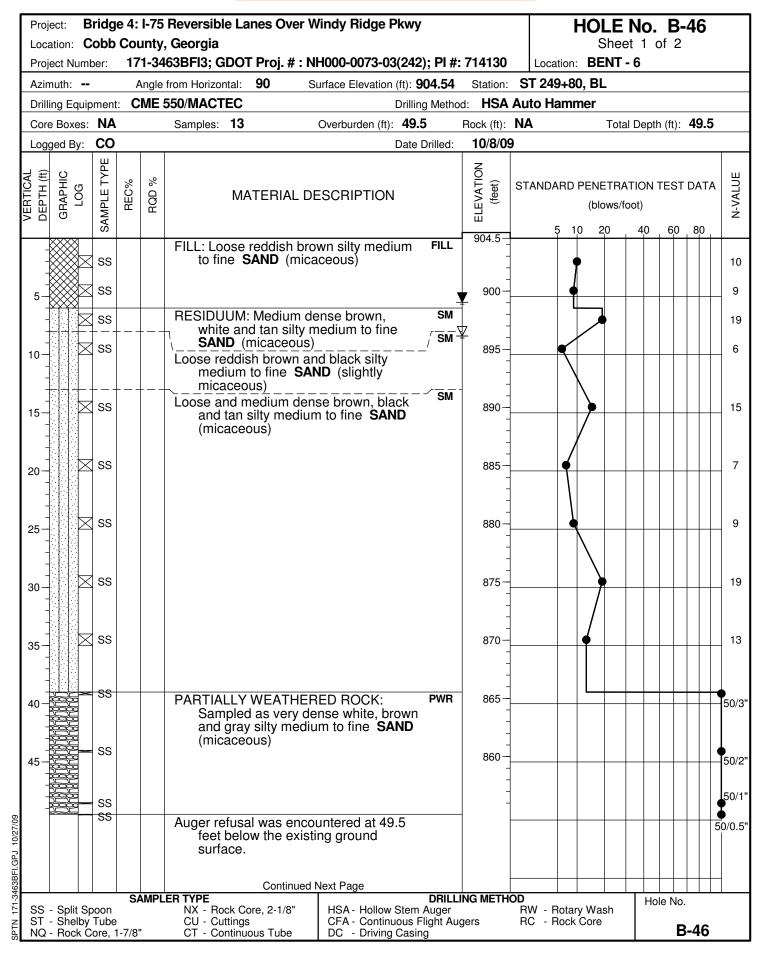


Bridge 4: I-75 Reversible Lanes Over Windy Ridge Pkwy HOLE No. B-44 Project: Location: Cobb County, Georgia Sheet 1 of 1 171-3463BFI3; GDOT Proj. #: NH000-0073-03(242); PI #: 714130 Location: BENT - 4 Project Number: ST 247+10, 20' Rt of BL Azimuth: --Angle from Horizontal: Surface Elevation (ft): 942.03 Station: Drilling Equipment: CME 550/Gable Drilling Method: HSA Auto Hammer Core Boxes: 1 Samples: 2 Overburden (ft): 4.6 Rock (ft): 9.5 Total Depth (ft): 14.1 MT/MG/PT 9/25/09 Logged By: Date Drilled: SAMPLE TYPE ELEVATION DEPTH (ft) N-VALUE GRAPHIC VERTICAL REC% (feet) STANDARD PENETRATION TEST DATA LOG R MATERIAL DESCRIPTION (blows/foot) 10 20 40 60 942.0 SM RESIDUUM: Dense to very dense reddish brown, tan, gray, and white SS 940 44 silty medium to fine SAND with rock SS 57 fragments ROCK CORE: Gray and white GNEISS RC 79 56 935 4.6'-8.6': Very hard to medium hard with soft zones 8.6'-14.1': Hard to medium hard with soft 10 RC 78 60 zones 930 Auger refusal was encountered 4.6 feet below the existing ground ground surface. Coring was terminated at 14.1 feet below the existing ground surface. No ground water was encountered at the time of boring completion. An offset boring was performed 5 feet east of the original location and auger refusal was encountered at 5 feet below the existing ground surface. SAMPLER TYPE **DRILLING METHOD** Hole No. NX - Rock Core, 2-1/8" SS - Split Spoon HSA - Hollow Stem Auger RW - Rotary Wash CU - Cuttings CFA - Continuous Flight Augers RC - Rock Core ST - Shelby Tube **B-44** NQ - Rock Core, 1-7/8" CT - Continuous Tube DC - Driving Casing

Bridge 4: I-75 Reversible Lanes Over Windy Ridge Pkwy HOLE No. B-45 Project: Location: Cobb County, Georgia Sheet 1 of 1 171-3463BFI3; GDOT Proj. #: NH000-0073-03(242); PI #: 714130 Location: **BENT - 5** Project Number: ST 248+48, 18' Rt of BL Azimuth: --Angle from Horizontal: Surface Elevation (ft): 931.67 Station: CME 550/Gable Drilling Method: HSA Auto Hammer Drilling Equipment: Core Boxes: NA Samples: 11 Overburden (ft): 45.5 Rock (ft): NA Total Depth (ft): 45.5 9/25/09 Logged By: MT/MG Date Drilled: SAMPLE TYPE ELEVATION DEPTH (ft) N-VALUE GRAPHIC **/ERTICA** REC% (feet) STANDARD PENETRATION TEST DATA LOG Rob MATERIAL DESCRIPTION (blows/foot) 60 10 20 40 931.7 FILL FILL: Loose and medium dense dark 930 brown silty medium to fine SAND SS 17 with root and rock fragments (slightly micaceous) SS 6 5 925 SS 19 SS 7 10 920 RESIDUUM: Very dense dark brown, SM black and tan silty medium to fine 57 -SS SAND (micaceous) 15 SM Very dense to medium dense gray. 915 white, tan and dark brown silty fine SAND SS 48 20 910 SS 11 25 905 SS PWR PARTIALLY WEATHERED ROCK: 50/4 30 Sampled as very dense gray, white, 900 and dark brown silty medium to fine SS 50/5 35 895 SS 50/3' 890 SS 50/1 45 Auger refusal was encountered at 45.5 feet below the existing ground surface. Ground water was encountered at 29 feet below the existing ground surface at the time of the boring completion. SAMPLER TYPE DRILLING METHOD Hole No. NX - Rock Core, 2-1/8" SS - Split Spoon HSA - Hollow Stem Auger RW - Rotary Wash CFA - Continuous Flight Augers RC - Rock Core CU - Cuttings ST - Shelby Tube **B-45** NQ - Rock Core, 1-7/8" CT - Continuous Tube DC - Driving Casing

171-3463BFI.GPJ 10/27/09







		obb	Cou	ınty,	Reversible Lanes Over Windy Ridge Pkwy Georgia 63BFI3; GDOT Proj. # : NH000-0073-03(242); PI #:	714130	Locati	HOLE No. B-46 Sheet 2 of 2 Location: BENT - 6							
VENTICAL DEPTH (#)	GRAPHIC LOG	SAMPLE TYPE	REC%	RQD %	MATERIAL DESCRIPTION	ELEVATION (feet)	STANDA	STANDARD PENETRATION TEST DATA (blows/foot)							
		/S			(Continued)		5	10	20	40	60	80	\perp		
					Ground water was encountered at 8.4 feet below the existing ground surface at the time of boring and at 5.5 feet below the existing ground surface 24 hours after boring completion.										
SS -	Split Sp	oon	SA	MPL	ER TYPE DRILLII NX - Rock Core, 2-1/8" HSA - Hollow Stem Auger	NG METH	DD RW - Ro	otarv W	/ash	Н	le No				
ST -	Shelby	JUUII			CU - Cuttings CFA - Continuous Flight Aug CT - Continuous Tube DC - Driving Casing		RC - Ro	raiy V	aon	- 1					



Bridge 4: I-75 Reversible Lanes Over Windy Ridge Pkwy **HOLE No. B-47** Project: Location: Cobb County, Georgia Sheet 1 of 2 171-3463BFI3; GDOT Proj. #: NH000-0073-03(242); PI #: 714130 Location: **BENT - 7** Project Number: Station: ST 251+20, 18' Lt. of BL Azimuth: --Angle from Horizontal: Surface Elevation (ft): **893.12 CME 550/MACTEC** Drilling Method: HSA Auto Hammer Drilling Equipment: Core Boxes: NA Samples: 15 Overburden (ft): 63.5 Rock (ft): NA Total Depth (ft): 63.5 10/8/09 Logged By: CO Date Drilled: SAMPLE TYPE ELEVATION DEPTH (ft) N-VALUE GRAPHIC **/ERTICA** REC% (feet) STANDARD PENETRATION TEST DATA Log R MATERIAL DESCRIPTION (blows/foot) 60 10 20 893.1 FILL FILL: Medium dense to very loose brown silty medium to fine SÁND SS 11 (micaceous) 890 SS 3 FILL Loose brown, tan and gray silty medium SS 5 to fine SAND with root fragments 885 (micaceous) SS SM 30 10 RESIDUUM: Medium dense black. reddish brown and tan silty medium to fine **SAND** with rock fragments 880 SM Medium dense brown and tan silty medium to fine **SAND** (micaceous) SS 11 15 875 SS 17 20 870 SS 22 25 865 SS 19 30 860 SS 11 35 855 SS PWR PARTIALLY WEATHERED ROCK: 50/4.5' Sampled as very dense brown, white and gray silty medium to fine SAND (micaceous) 850 SS 50/1 45 845 SS 50 50/4 840 SS 91/9 Continued Next Page SAMPLER TYPE DRILLING METHOD Hole No. NX - Rock Core, 2-1/8" SS - Split Spoon HSA - Hollow Stem Auger RW - Rotary Wash CU - Cuttings RC - Rock Core CFA - Continuous Flight Augers ST - Shelby Tube **B-47** NQ - Rock Core, 1-7/8" CT - Continuous Tube DC - Driving Casing

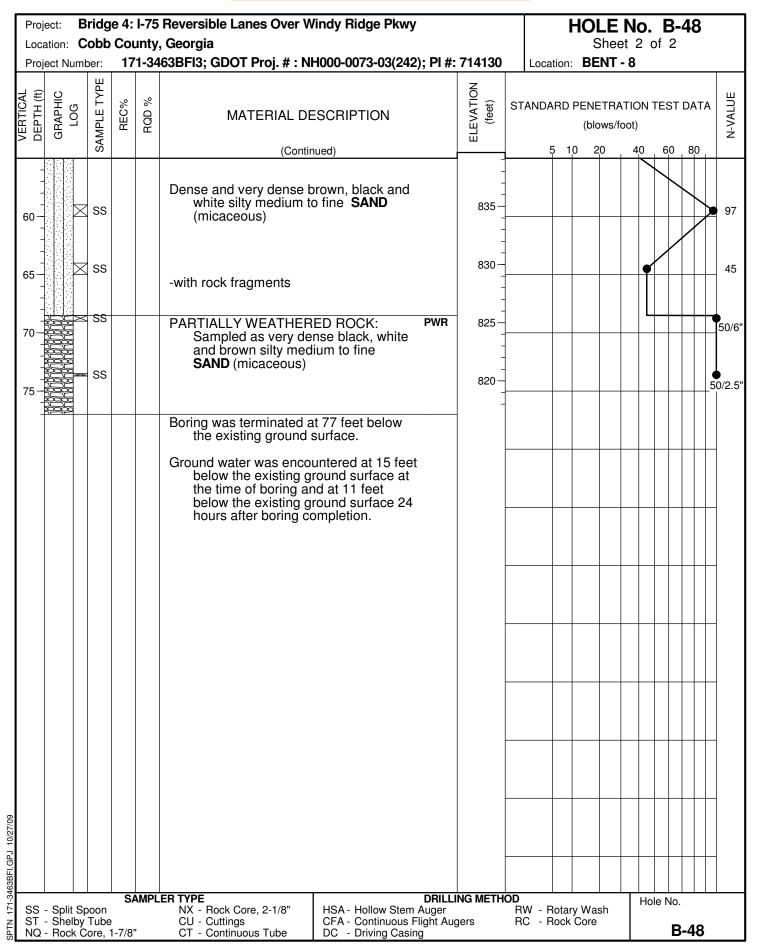
171-3463BFI.GPJ 10/27/09



Loc	cation: C	obb	Cou	unty,	Reversible Lanes Over W Georgia	, , ,				She	No.		47	
Pro	ject Num	ber:	17	1-34	63BFI3; GDOT Proj. # : NI	1000-0073-03(242); PI #:	714130	Loca	ation:	BENT	- 7			
VERTICAL	GRAPHIC	SAMPLE TYPE	REC%	RQD %	MATERIAL DE		ELEVATION (feet)	STANDA	((blows/	foot)			N-VALUE
\vdash		0)			(Contin	ued)	1		5 10	20	40	+ 60	80	
60-		SS			PARTIALLY WEATHER Sampled as very der and gray silty medium (micaceous)		835 —							50/1
		SS			Boring was terminated a the existing ground s	t 63.5 feet below surface.	830-							50/2
					Ground water was encound below the existing ground street the existing ground street after boring completion.	round surface at ad at 3 feet below surface 24 hours								
					and boing completi	OII.								
SPTN 171-3463BFI.GPJ 10/27/09 Z S S S S S S S S S S S S S S S S S S														
3463BFI.GF			6,	MDI	ER TYPE	neuti	NG METHO							
SPTN 171 SZ NG	- Split S - Shelby - Rock C	Tube	!		NX - Rock Core, 2-1/8" CU - Cuttings CT - Continuous Tube	HSA - Hollow Stem Auger CFA - Continuous Flight Aug DC - Driving Casing		RW - F RC - F	Rotary V Rock Co	Vash ore	HO	ole No E	8-47	,

Bridge 4: I-75 Reversible Lanes Over Windy Ridge Pkwy HOLE No. B-48 Project: Location: Cobb County, Georgia Sheet 1 of 2 171-3463BFI3; GDOT Proj. #: NH000-0073-03(242); PI #: 714130 Location: **BENT - 8** Project Number: Station: ST 252+40, 8' Rt. of BL Surface Elevation (ft): **894.13** Azimuth: --Angle from Horizontal: **CME 550/MACTEC** Drilling Method: HSA Auto Hammer Drilling Equipment: Core Boxes: NA Samples: 17 Overburden (ft): 77 Rock (ft): NA Total Depth (ft): 77.0 10/9/09 Logged By: CO Date Drilled: SAMPLE TYPE ELEVATION DEPTH (ft) N-VALUE GRAPHIC VERTICAL REC% (feet) STANDARD PENETRATION TEST DATA LOG Rob MATERIAL DESCRIPTION (blows/foot) 60 10 20 894.1 FILL FILL: Very loose, loose and medium dense brown and tan silty medium to SS 4 fine SAND (micaceous) 890 SS 12 5 SS 6 885 SS 10 Very loose gray and tan silty medium to fine **SAND** with wood and rock FILL 880 SS 3 15 fragments (micaceous) RESIDUUM: Very loose to medium SM 875 SS 4 dense white, brown and black silty 20 medium to fine **SAND** (micaceous) 870 SS 15 25 SM Dense white, brown and black silty coarse to fine SAND (micaceous) 865 SS 38 30 Medium dense, dense and very dense SM 860 SS 11 brown, black and white silty medium 35 to fine SAND (micaceous) - with rock fragments 855 SS 53 850 SS 51 45 845 SS 31 50 840 SS 36 Continued Next Page SAMPLER TYPE DRILLING METHOD Hole No. NX - Rock Core, 2-1/8" SS - Split Spoon HSA - Hollow Stem Auger RW - Rotary Wash CU - Cuttings RC - Rock Core CFA - Continuous Flight Augers ST - Shelby Tube **B-48** NQ - Rock Core, 1-7/8" CT - Continuous Tube DC - Driving Casing

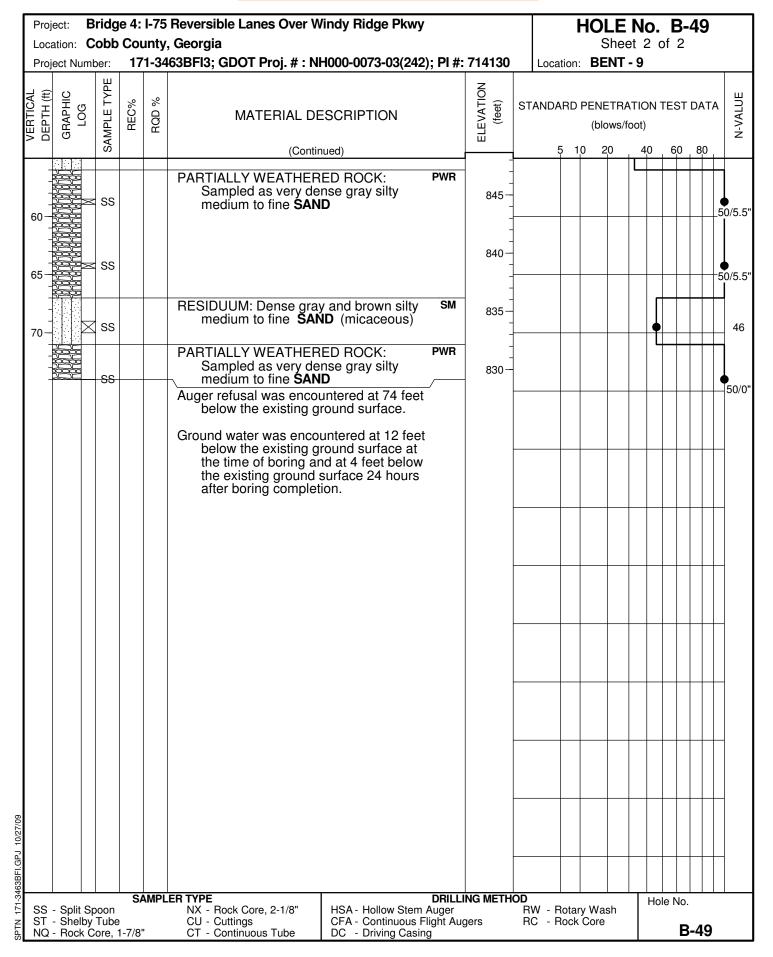






Bridge 4: I-75 Reversible Lanes Over Windy Ridge Pkwy HOLE No. B-49 Project: Location: Cobb County, Georgia Sheet 1 of 2 171-3463BFI3; GDOT Proj. #: NH000-0073-03(242); PI #: 714130 Location: BENT - 9 Project Number: ST 254+20, 14' Rt. of BL Station: Azimuth: --Angle from Horizontal: Surface Elevation (ft): 903.15 **CME 550/MACTEC** Drilling Method: HSA Auto Hammer Drilling Equipment: Core Boxes: NA Samples: 17 Overburden (ft): 74 Rock (ft): NA Total Depth (ft): 74.0 10/8/09 Logged By: Date Drilled: SAMPLE TYPE ELEVATION DEPTH (ft) N-VALUE GRAPHIC **/ERTICA** REC% (feet) STANDARD PENETRATION TEST DATA LOG Rob MATERIAL DESCRIPTION (blows/foot) 60 10 20 903.2 TOPSOIL - 2 inches /FILL SS 4 FILL: Very loose to dense brown and reddish brown silty medium to fine 900 SS 33 with rock fragments SC ALLUVIUM: Loose gray and tan clayey SS 9 medium to fine SAND 895 SM RESIDUUM: Loose gray and brown silty medium to fine **SAND** (micaceous) SS 8 10 890 SS 8 15 885 Loose reddish brown and gray silty SM SS 9 medium to fine SAND (slightly 20 micaceous) 880 SS 9 25 875 Dense to medium dense gray and brown SS 38 silty medium to fine SAND 30 (mícaceous) 870 SS 16 865 ĪSS Medium dense gray and white silty medium to fine **SAND** with quartz SM 22 fragments 860 Dense and very dense gray and brown SM 35 SS silty medium to fine SAND with 45 quartz fragments 855 SS 53 50 850 SS 33 Continued Next Page DRILLING METHOD SAMPLER TYPE Hole No. NX - Rock Core, 2-1/8" SS - Split Spoon HSA - Hollow Stem Auger RW - Rotary Wash CU - Cuttings RC - Rock Core CFA - Continuous Flight Augers ST - Shelby Tube **B-49** NQ - Rock Core, 1-7/8" CT - Continuous Tube DC - Driving Casing

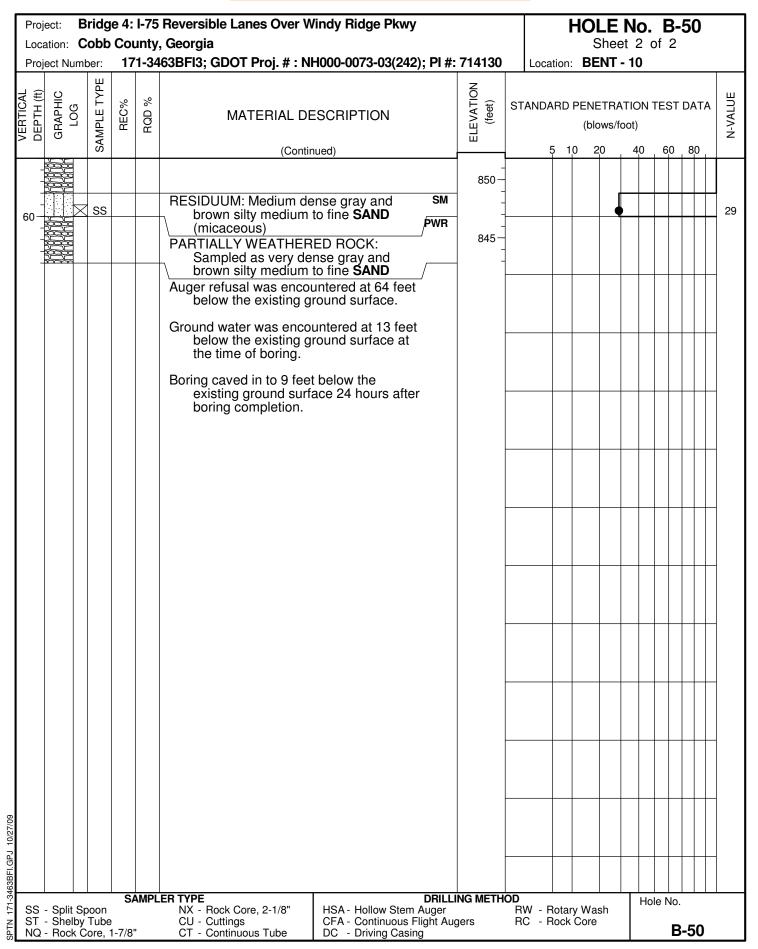






Bridge 4: I-75 Reversible Lanes Over Windy Ridge Pkwy HOLE No. B-50 Project: Location: Cobb County, Georgia Sheet 1 of 2 Location: **BENT - 10** 171-3463BFI3; GDOT Proj. #: NH000-0073-03(242); PI #: 714130 Project Number: ST 255+26, 19' Rt. of BL Azimuth: --Angle from Horizontal: Surface Elevation (ft): 906.84 Station: Drilling Method: HSA Auto Hammer **CME 550/MACTEC** Drilling Equipment: Core Boxes: NA Overburden (ft): 64 Rock (ft): NA Total Depth (ft): 64.0 Samples: 14 10/8/09 Logged By: Date Drilled: SAMPLE TYPE ELEVATION DEPTH (ft) N-VALUE GRAPHIC **/ERTICA** REC% (feet) STANDARD PENETRATION TEST DATA Log BB MATERIAL DESCRIPTION (blows/foot) 60 10 20 906.8 TOPSOIL - 2 inches /FILL SS 10 FILL: Medium dense gray and brown 905 silty medium to fine SAND SS (micaceous) 50/5 - with boulders 900 SS 17 SS 12 10 895 SS SM 12 RESIDUUM: Medium dense gray and 15 white silty medium to fine SAND 890 (slightly micaceous) Loose to medium dense gray and tan SM SS 10 silty medium to fine SAND (slightly 20 micaceous) 885 SS 9 25 880 SS 17 - with rock fragments 30 875 Medium dense gray and brown silty medium to fine **SAND** (micaceous) SM SS 16 35 870 SS 24 865 SM Dense gray, white and brown silty SS 49 medium to fine SAND with rock 45 fragments (slightly micaceous) 860 SS PARTIALLY WEATHERED ROCK: PWR 171-3463BFI.GPJ 10/27/09 77/10" Sampled as very dense gray and brown silty medium to fine SAND 855 SS 50/5.5 Continued Next Page SAMPLER TYPE DRILLING METHOD Hole No. NX - Rock Core, 2-1/8" SS - Split Spoon HSA - Hollow Stem Auger RW - Rotary Wash CU - Cuttings RC - Rock Core CFA - Continuous Flight Augers ST - Shelby Tube **B-50** NQ - Rock Core, 1-7/8" CT - Continuous Tube DC - Driving Casing







Bridge 4: I-75 Reversible Lanes Over Windy Ridge Pkwy HOLE No. B-51 Project: Location: Cobb County, Georgia Sheet 1 of 2 171-3463BFI3; GDOT Proj. #: NH000-0073-03(242); PI #: 714130 Project Number: Location: **BENT - 11** ST 256+85, 21' Rt. of BL Station: Azimuth: --Angle from Horizontal: Surface Elevation (ft): 911.30 Drilling Method: HSA Auto Hammer **CME 550/MACTEC** Drilling Equipment: Core Boxes: NA Samples: 13 Overburden (ft): 55 Rock (ft): NA Total Depth (ft): 55.0 10/8/09 Logged By: Date Drilled: SAMPLE TYPE ELEVATION DEPTH (ft) N-VALUE GRAPHIC **/ERTICA** REC% (feet) STANDARD PENETRATION TEST DATA Log Rob MATERIAL DESCRIPTION (blows/foot) 60 20 40 911.3 TOPSOIL - 2 inches /FILL SS 10 910-FILL: Loose gray and brown silty medium to fine **SAND** with rock SM SS fragments (micaceous) 7 RESIDUUM: Loose gray and tan silty medium to fine **SAND** (slightly 905 SM SS 15 micaceous) Medium dense to dense gray and brown SS 12 10 silty medium to fine SAND with rock 900 fragments (micaceous) 15 SS 34 895 20 Medium dense gray and brown silty medium to fine **SAND** SM SS 16 890 25 SS 11 885 30 - with rock fragments SS 20 880 35 SM Medium dense to dense tan and brown SS 30 875 silty medium to fine SAND with rock fragments SS 34 870 45 SS PARTIALLY WEATHERED ROCK: **PWR** 865 50/1 Sampled as very dense gray and brown silty medium to fine SAND 50 171-3463BFI.GPJ 10/27/09 SS 860 50/5" Continued Next Page SAMPLER TYPE DRILLING METHOD Hole No. NX - Rock Core, 2-1/8" RW - Rotary Wash SS - Split Spoon HSA - Hollow Stem Auger CU - Cuttings RC - Rock Core CFA - Continuous Flight Augers ST - Shelby Tube **B-51** NQ - Rock Core, 1-7/8" CT - Continuous Tube DC - Driving Casing



	ject:		_			Reversible Lanes Over W	/indy Ridge Pkwy				Н	OL I		Vo.		·51		7
	ject N				-	63BFl3; GDOT Proj. # : NI	H000-0073-03(242); PI #:	714130		Locat	ion:							
VERTICAL DEPTH (#)	GRAPHIC	FOG	SAMPLE TYPE	REC%	RQD %	MATERIAL DE	ESCRIPTION	ELEVATION (feet)	STA	ANDARD PENETRA (blows/f						DAT	A N-VALUE	
						(Contir				5	10	20	_	40	60	80	1	╝
			S S			Auger refusal was encount below the existing ground water was encounted below the existing ground at the existing ground after boring complete.	untered at 55 feet round surface.			5				40	60	80	50/	1"
SPTN 171:3463BFI.GPJ 10/27/09 NA SS																		
BFI.G																		
N 171-3463 TS ST	- Split				AMPL	ER TYPE NX - Rock Core, 2-1/8" CU - Cuttings	DRILLII HSA - Hollow Stem Auger CFA - Continuous Flight Aug	NG METH	RV	V - Ro	otary \	Wash ore		Но	le No			\exists
NQ	- Roc	k Ć	ore, 1	-7/8'	•	CT - Continuous Tube	DC - Driving Casing	•	_	-	-				Е	3-51		ı



Bridge 4: I-75 Reversible Lanes Over Windy Ridge Pkwy **HOLE No. B-52** Project: Location: Cobb County, Georgia Sheet 1 of 2 Location: **BENT - 12** 171-3463BFI3; GDOT Proj. #: NH000-0073-03(242); PI #: 714130 Project Number: Station: ST 258+20, 20' Rt. of BL Surface Elevation (ft): 924.03 Azimuth: --Angle from Horizontal: CME 550/MACTEC Drilling Method: HSA Auto Hammer Drilling Equipment: Overburden (ft): 54 Core Boxes: NA Samples: 13 Rock (ft): NA Total Depth (ft): 54.0 9/30/09 Date Drilled: Logged By: CO SAMPLE TYPE ELEVATION DEPTH (ft) N-VALUE GRAPHIC **/ERTICA** REC% (feet) STANDARD PENETRATION TEST DATA LOG Rob MATERIAL DESCRIPTION (blows/foot) 60 10 20 40 924.0 SM RESIDUUM: Loose white to brown and tan silty medium to fine SAND SS 8 (micaceous) 920 SS 8 7 SS 915 SS 8 10 910 SS 6 15 905 SS 9 20 Medium dense and very dense dark brown, white and tan silty medium to SM 900 SS 19 25 fine SAND (micaceous) 895 SS 27 30 890 SS 78 35 885 SS 25 880 SS PARTIALLY WEATHERED ROCK: PWR 50/4" 45 Sampled as very dense black, brown and white silty medium to fine SAND with rock fragments (micaceous) SS 875 50/1 50 SS 50/0.25" Continued Next Page SAMPLER TYPE DRILLING METHOD Hole No. NX - Rock Core, 2-1/8" SS - Split Spoon HSA - Hollow Stem Auger RW - Rotary Wash RC - Rock Core CU - Cuttings CFA - Continuous Flight Augers ST - Shelby Tube **B-52** NQ - Rock Core, 1-7/8" CT - Continuous Tube DC - Driving Casing



Proje Loca			_		Reversible Lanes Over W , Georgia	indy Ridge Pkwy				НО		No et 2			
Proje	ect Nur	nber:	17	71-34	63BFI3; GDOT Proj. # : NI	H000-0073-03(242); PI #:	714130	l	ocation	n: BE	NT	- 12			
VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	REC%	RQD %	MATERIAL DE	ESCRIPTION	ELEVATION (feet)	STA	STANDARD PENETRA (blows/f			/foot)			N-VALUE
		\\\ \			(Contir				5	10 2	20	40	60	80	
					Auger refusal was encount below the existing good Ground water was encountered.										
					below the existing g the time of boring.	round surface at									
					Boring caved in to 18.5 to existing ground surface boring completion.	eet below the ace at the time of									
0/27/09															
63BFI.GPJ															+
z ST -	- Split S - Shelb - Rock	y Tub	e e		ER TYPE NX - Rock Core, 2-1/8" CU - Cuttings CT - Continuous Tube	DRILLII HSA - Hollow Stem Auger CFA - Continuous Flight Aug DC - Driving Casing	NG METH	RW	' - Rota - Rocl	ary Wa k Core	sh	H	ole No	3-52	



HOLE No. B-53 Bridge 4: I-75 Reversible Lanes Over Windy Ridge Pkwy Project: Sheet 1 of 1 Location: Cobb County, Georgia 171-3463BFI3; GDOT Proj. #: NH000-0073-03(242); PI #: 714130 Location: BENT - 13 Project Number: ST 259+60, 17' Rt. of BL Azimuth: --Angle from Horizontal: Surface Elevation (ft): 926.66 Station: Drilling Method: HSA Auto Hammer **CME 550/MACTEC** Drilling Equipment: Core Boxes: NA Overburden (ft): 45 Rock (ft): NA Total Depth (ft): 45.0 Samples: 12 10/8/09 Logged By: Date Drilled: SAMPLE TYPE ELEVATION VERTICAL DEPTH (ft) N-VALUE GRAPHIC REC% (feet) STANDARD PENETRATION TEST DATA Log ROD MATERIAL DESCRIPTION (blows/foot) 10 20 40 60 926.7 TOPSOIL - 2 inches SS 5 925 FILL: Loose gray and brown silty SM medium to fine SAND with root and rock fragments (micaceous) SS 37 RESIDUUM: Dense gray and white silty medium to fine **SAND** (slightly 920 SS 40 micaceous) SS 50 10 915 SM Medium dense gray and brown silty medium to fine **SAND** (micaceous) SS 15 15 910 SS 21 20 905 SS 21 25 900 SS PWR PARTIALLY WEATHERED ROCK: .50/5.5['] 30 Sampled as very dense gray and white silty medium to fine SAND with 895 SM rock fragments RESIDUUM: Medium dense gray and SS 54 35 brown silty medium to fine SAND with quartz fragments (micaceous) 890 SS 38 PARTIALLY WEATHERED ROCK: PWR SS 50/5.5 Sampled as very dense gray and 885 white silty medium to fine SAND SS 50/1" SS Auger refusal was encountered at 45 feet 50/0' below the existing ground surface. Ground water was encountered at 19 feet 171-3463BFI.GPJ 10/27/09 below the existing ground surface at the time of boring and at 15 feet below the existing ground surface 24 hours after boring completion. SAMPLER TYPE DRILLING METHOD Hole No. SS - Split Spoon NX - Rock Core, 2-1/8" HSA - Hollow Stem Auger RW - Rotary Wash CFA - Continuous Flight Augers CU - Cuttings ST - Shelby Tube RC - Rock Core **B-53** NQ - Rock Core, 1-7/8" CT - Continuous Tube DC - Driving Casing

Bridge 4: I-75 Reversible Lanes Over Windy Ridge Pkwy HOLE No. B-54 Project: Location: Cobb County, Georgia Sheet 1 of 2 Location: **BENT - 14** 171-3463BFI3; GDOT Proj. #: NH000-0073-03(242); PI #: 714130 Project Number: ST 261+09, 13' Rt. of BL Surface Elevation (ft): 938.76 Station: Azimuth: --Angle from Horizontal: Drilling Method: HSA Auto Hammer CME 550/MACTEC Drilling Equipment: Core Boxes: NA Samples: 16 Overburden (ft): 65 Rock (ft): NA Total Depth (ft): 65.0 10/6/09 Logged By: Date Drilled: SAMPLE TYPE ELEVATION DEPTH (ft) N-VALUE GRAPHIC **/ERTICA** REC% (feet) STANDARD PENETRATION TEST DATA Log Rob MATERIAL DESCRIPTION (blows/foot) 60 10 20 938.8 FILL: Loose reddish brown silty medium **FILL** SS 10 to fine SAND with rock fragments SS 8 RESIDUUM: Loose and medium dense 935 reddish brown and gray silty medium SS 11 to fine **SAND** (slightly micaceous) SS 8 930 SS 10 ST SM Medium dense gray silty medium to fine 925 SS SAND with rock fragments 11 15 (micaceous) 920 SS 24 20 ∇ SM Loose and medium dense reddish 915 SS 11 brown, gray and white silty medium 25 to fine **SAND** (slightly micaceous) 910 SS 10 30 905 SS 10 35 900 SS 28 SM Very dense to medium dense gray and 895 SS 66 brown silty medium to fine SAND 45 (slightly micaceous) 890 SS 26 50 171-3463BFI.GPJ 10/27/09 885 **PWR** 180/7 55 Continued Next Page SAMPLER TYPE DRILLING METHOD Hole No. NX - Rock Core, 2-1/8" SS - Split Spoon HSA - Hollow Stem Auger RW - Rotary Wash CU - Cuttings RC - Rock Core CFA - Continuous Flight Augers ST - Shelby Tube **B-54** NQ - Rock Core, 1-7/8" CT - Continuous Tube DC - Driving Casing



Proj		_			Reversible Lanes Over Wind Georgia	dy Ridge Pkwy					No.		54	
	ect Num				63BFI3; GDOT Proj. # : NH00	00-0073-03(242); PI #:	714130	Locat	ion: Bl			J1		
VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	REC%	RQD %	MATERIAL DESC	CRIPTION	ELEVATION (feet)	STANDA		ETRA		TEST	DATA	N-VALUE
	NE VET	/S			(Continued			5	10	20	40	60	80	
60-		SS			PARTIALLY WEATHERED Sampled as very dense silty medium to fine SA	e gray and tan	880— - - - -							- 89/11"
65 -		SS SS					875							50/1"
SPIN 1713-3463BF1.GFJ 10/2/09 Z S S S D T S S S S D T S S S S S S S S S S S S S S S S S S					Auger refusal was encount below the existing ground water was encount below the existing ground the time of boring. Boring caved in to 26 feet the existing ground surface boring completion.	tered at 21 feet and surface at								50/0"
-3463			SA	AMPL	ER TYPE		NG METHO				Ho	le No.	<u> </u>	\perp
SS ST NQ	Split SShelbyRock 0	, Tube	; 1-7/8'		CU - Cuttings C	ISA - Hollow Stem Auger CFA - Continuous Flight Aug IC - Driving Casing	jers	RW - Ro RC - Ro	otary Wa ock Core	ash e			8-54	